Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) ~~An~~ A low-IF analog radio receiver comprising

a first front-end down-conversion mixer to down-convert an RF signal from a first low noise amplifier (LNA) into respective intermediate frequency I and Q signals;

a second down-conversion mixer to convert said intermediate frequency I and Q signals into a base-band signal with desired signal centered at DC, said second down-conversion mixer to translate a DC offset in frequency domain to a frequency higher than said desired signal, said translated DC offset located at the same frequency of ~~the~~ a second LO frequency; and

a notch filter coupled to said second down-conversion mixer to reduce said translated DC offset.

2. (Previously Presented) The radio receiver of claim 1, wherein the first front-end down-conversion mixer is a quadrature mixer performs a down-conversion of the RF signal and the quadrature mixer matches phase and gain in the I/Q signal.

3. (Original) The radio receiver of claim 2, wherein the phase and gain are matched to achieve an amount of image rejection.

4. (Previously Presented) The radio receiver of claim 3, wherein the amount of image rejection is about 40 dB.

5. (Currently Amended) The radio receiver of claim 1, comprising a gain stage and a filtering stage serially coupled to an output of said first down-conversion mixer to partially reject out-of-band signals and to block noise from propagating into a following stage.

6. (Currently Amended) The radio receiver of claim 1, comprising an analog-to-digital converter coupled to an output of said notch filter, wherein a frequency of ~~said~~ a second LO signal is not less than a channel width of said analog radio receiver.

7. (Currently Amended) The radio receiver of claim 1, wherein the second down-conversion mixer translates a static or dynamic DC offset in frequency domain, resulting in a carrier leakage and the carrier leakage is located at the same frequency of the second LO frequency.

8. (Currently Amended) The radio receiver of claim 6, wherein a gain stage and a filtering stage coupled to an output of each of said first and second down-conversion mixer is used to block noise from being input into a following stage.

9. (Previously Presented) The radio receiver of claim 6, wherein said notch filter is used to eliminate a carrier leakage caused by static or dynamic DC-offset.

10. (Previously Presented) The radio receiver of claim 9, wherein the notch filter includes at least one of an elliptic filter and a chebyschef-II type filter.

11. (Original) The radio receiver of claim 1, wherein a plurality of local oscillator (LO) signals including at least a first LO signal and a second LO signal are generated using a phase locked loop (PLL) circuit.

12. (Previously Presented) The radio receiver of claim 11, wherein the second LO signal is generated using a direct digital frequency synthesizer (DDFS) or a divided reference clock input with filtering to reject harmonic signals.

13. (Currently Amended) The radio receiver of claim 11,wherein the second down-conversion mixer comprises:

a third mixer coupled to receive intermediate frequency I signals from said first down-conversion mixer and a second LO I signal;

a fourth mixer coupled to receive said intermediate frequency I signals from said first down-conversion mixer and a second LO Q signal;

a fifth mixer coupled to receive intermediate frequency Q signals from said first down-conversion mixer and said second LO Q signal;

a sixth mixer coupled to receive said intermediate frequency Q signals from said first down-conversion mixer and said second LO I signal;

a first logic circuit to combine the output of the third and fifth mixer; and

a second logic circuit to combine the output of the fourth and sixth mixer.

14. (Currently Amended) An analog radio receiving method comprising:

using a first front-end down-conversion mixing to down-convert an RF signal from a first low noise amplifier (LNA) into respective intermediate frequency I and Q signals;

using a second down-conversion mixing to down-convert said intermediate frequency signals to obtain a desired signal that is centered at DC and translate a DC-offset to a carrier leakage signal at a second LO frequency not less than a channel width;

local filtering at said second LO frequency to suppress said carrier leakage; and

analog-to-digital converting said desired signal, wherein a first LO signal is very high frequency close to the incoming carrier signal and a second LO signal is close to DC and the receiving method becomes a low-IF analog radio receiving method.

15. (Previously Presented) The radio receiving method of claim 14, wherein a gain stage and a filtering stage are used to partially reject out-of-band signals and to block noise from propagating into a following stage after each of said first and second down-conversion mixing.

16. (Currently Amended) The radio receiving method of claim 14, wherein the~~a~~ second down-conversion mixer converts a low-IF signal into a base-band signal.

17-19. Canceled.

20. (Currently Amended) The radio receiving method of claim 14, wherein a notch filter is used to suppress the carrier leakage signal to an acceptable level.

21. (Previously Presented) The radio receiving method of claim 14, wherein harmonics of the second LO signal are designed with a spectral purity to achieve an acceptable signal-to-noise ratio (SNR).

22. (Currently Amended) The radio receiving method of claim 21, wherein a frequency sum of ~~a~~ the first LO signal and the second LO signal is the same as the desired RF signal frequency from ~~the~~ an antenna.

23. (Currently Amended) The radio receiving method of claim 21, wherein a frequency of the~~a~~ first LO signal is the same as a frequency of the second LO signal.

24. Canceled

25. (New) The radio receiver of claim 6, wherein the frequency of the second LO signal is selected by balancing an increase to reduce image rejection and a decrease to reduce transient response time.